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## THESIS

### STUDY OF ATTRITION AMONG ENLISTED WOMEN IN THE NAVY

by

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March 1997

Principal Advisor:

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**STUDY OF ATTRITION AMONG ENLISTED  
WOMEN IN THE NAVY**

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Lieutenant Commander, United States Navy  
M.S.W., University of Alabama, 1983

Submitted in partial fulfillment  
of the requirements for the degree of

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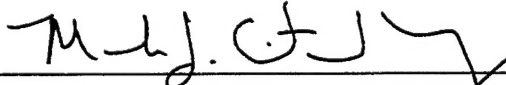
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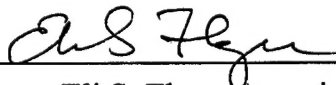


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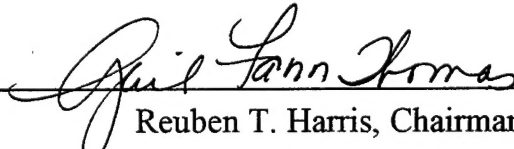
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## **ABSTRACT**

This thesis examines data on the possible reasons for attrition among enlisted women in the Navy. Cross-tabulations are employed to analyze the most prevalent reasons for attrition among women in the Navy across occupations and compared with men. Entry cohorts from fiscal years 1986 through 1990 were used to identify personnel who left the Navy prior to the completion of their obligated service over a 48-month period. The study results indicate that, with the exception of pregnancy and alcohol/drugs, the reasons for early separation are generally the same for men and women across Navy occupations. The study suggests that further research is needed to accurately determine and address the reasons for female attrition from the Navy.



## TABLE OF CONTENTS

I.	INTRODUCTION .....	1
A.	BACKGROUND .....	1
B.	THESIS OVERVIEW .....	2
1.	Focus .....	2
2.	Outline .....	3
3.	Purpose .....	3
II.	LITERATURE REVIEW .....	5
A.	HISTORICAL PERSPECTIVE: UTILIZATION OF WOMEN ..	5
1.	Revolution Through the Spanish-American War .....	5
a.	Revolution and the War of 1812 .....	5
b.	The Civil War .....	6
c.	The Spanish-American War .....	7
2.	Two World Wars Through Vietnam .....	8
a.	World War I .....	8
b.	World War II .....	10
c.	The Korean War .....	13
d.	The War in Vietnam .....	14
3.	The Decades Ahead .....	16

a.	The Post-Vietnam Era .....	16
b.	The Eighties to Present Day .....	19
4.	Summary .....	21
B.	MILITARY ATTRITION STUDIES .....	22
1.	Accession Management Studies .....	22
2.	Studies Across Gender and Reasons for Separation .....	24
a.	General Accounting Office (GAO) Report .....	24
b.	RAND Corporation Study .....	25
c.	Center for Naval Analyses Study .....	26
d.	Defense Advisory Committee Report .....	28
3.	Summary .....	30
III.	DATA AND METHODOLOGY .....	33
A.	DATA SET .....	33
B.	METHODOLOGY .....	33
C.	VARIABLE DEFINITION .....	34
D.	DATA LIMITATIONS .....	37
IV.	RESULTS .....	39
A.	RESULTS ACROSS OCCUPATIONS .....	39
B.	RESULTS ACROSS REASONS .....	43
C.	RESULTS ACROSS OCCUPATIONS AND REASON .....	44

1.	Infantry, Gun Crews, and Seamanship Specialists .....	46
2.	Electronic Equipment Repairers .....	48
3.	Communications and Intelligence Specialists .....	49
4.	Health Care Specialists .....	50
5.	Other Technical and Allied Specialists .....	51
6.	Functional Support and Administration .....	52
7.	Electrical/Mechanical Equipment Repairers .....	53
8.	Craftsmen .....	54
9.	Service and Supply Handlers .....	55
10.	Non-Occupational .....	56
D.	SUMMARY OF RESULTS .....	56
V.	CONCLUSIONS AND RECOMMENDATIONS .....	59
A.	CONCLUSIONS .....	59
B.	RECOMMENDATIONS .....	59
	INITIAL DISTRIBUTION LIST .....	63

## I. INTRODUCTION

### A. BACKGROUND

The ability of the Navy to be successful in the accomplishment of its peacetime and wartime missions depends largely on its success in manning ships, squadrons, and shore facilities with competent, capable, and highly motivated personnel. Along with this success in manning comes a high price tag. During the first half of the 1980s, the annual defense budget mushroomed from \$144 billion to \$295 billion.<sup>1</sup> The Pentagon was authorized to spend \$265.3 billion for defense in fiscal 1996, with the Navy's share being \$75.6 billion. Almost 60 percent of this funding went to personnel matters such as pay, benefits, readiness, and training.<sup>2</sup>

Historically, military expenditures have not been a source of great concern for the nation; however, over the past twelve years, the government has been increasingly determined to reduce the federal deficit. Since 1985, the biggest source of deficit reduction has been through reducing the defense budget. The real challenge for the future--and a concern for all military services--is how to duplicate the success of the past while still operating with a declining budget.

For all the services, it has become an issue of making the most out of the authorized funding. As the cost of recruiting, training, and maintaining a strong military continues to increase in the face of budgetary cuts, personnel "attrition," or the separation of military members prior to the expiration of their obligated service, has become an issue of great concern. A 1991 RAND study highlights the impact of attrition:

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<sup>1</sup>Mark J. Eitelberg and Stephen L. Mehay, eds., Marching Toward the 21st Century, Military Manpower and Recruiting (Westport, Connecticut: Greenwood Press, 1994), 232.

<sup>2</sup>Congressional Quarterly Almanac, vol. LI (Washington, D. C.: Government Printing Office, 1995), 9-13.

Approximately 27 percent of recruits who enter military services will leave before completing 35 months of their first enlistment. This amount of attrition represents a major loss of recruiting and training resources.<sup>3</sup>

When the Navy spends scarce funds on recruiting, training, and equipping personnel, the expectation is that these personnel will be on the job for years to come.

This expectation has become a priority during a period in which the Navy is moving from 98 percent male-specific jobs to 95 percent gender-neutral jobs. Today, women are almost completely integrated into all occupations in the Navy. This is not only a statement of how diverse the Navy's human resources have become, it is also a statement of how another factor has been added to the challenge of ensuring a return on individual investments.

The Navy has a personnel force worth billions of dollars, so it makes good sense to study this "most valuable asset," human resources, in terms of reducing attrition. This thesis attempts to assist in the effort by focusing specifically on the attrition experiences of female sailors. It is hoped that added information on attrition by women will help the Navy in its attempt to reduce the unplanned loss of personnel and thereby operate more cost-effectively.

## **B. THESIS OVERVIEW**

### **1. Focus**

This thesis provides data on the possible reasons for female enlisted attrition. The broad spectrum of this study is identified in the following research questions:

1. What are the most common reasons for early separation among enlisted women in the Navy across occupations? How do these reasons compare with those of men?

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<sup>3</sup>Stephen Klein, Jennifer Hawes-Dawson, and Thomas Martin, Why Recruits Separate Early, R-3980-FMP, (Santa Monica, CA: RAND Corporation, 1991), 5.

2. Are the major reasons for early separation in occupations with relatively high attrition rates the same as those in occupations with relatively low attrition rates?
3. Are the most prevalent reasons for early separation in occupations with a high percentage of women the same as those in occupations with a relatively low percentage of women?

## **2. Outline**

There are five chapters in this thesis. Chapter I contains background information and a general overview, which describes the focus, outline, and purpose of the thesis. The second chapter reviews historical information and selected literature regarding the military's use of women and attrition by female personnel. Chapter III specifies the data sets that were used in the study and the cross-tabulation methodology employed. The fourth chapter presents the results of the data analysis. The last chapter offers conclusions and recommendations based on the study.

## **3. Purpose**

It is anticipated that the results of this study will assist the Navy in identifying approaches that will help to maintain the strongest and most capable force during a period of declining budget.



## II. LITERATURE REVIEW

### A. HISTORICAL PERSPECTIVE: UTILIZATION OF WOMEN

As of June 1996, women represented about 13 percent of all active-duty personnel in the U.S. Armed Forces, and they accounted for 12.4 percent of naval personnel.<sup>4</sup> These percentages of women are relatively high when viewed in historical context. There was a time when only a few women were officially utilized by the military, and in very few occupations. Their presence was tolerated and welcomed by military leaders only during times of war, as long as they did what was requested, did not ask for much in return, and did not reduce combat readiness or cost effectiveness.

Today, women serve in 736 of the 999 enlisted occupational specialties in the Department of Defense and in all but two officer communities.<sup>5</sup> Women have gone from just being tolerated, to being recognized as a valuable human resource that should be utilized if the military is to be successful in its mission. This change in the military service of women, however, has been slow at best and not without difficulty. This section provides a review of literature on the history of women in the military. It begins with the Revolutionary War period and concludes with the current status of women in the All-Volunteer Force.

#### 1. Revolution Through the Spanish-american War

##### *a. Revolution and the War of 1812*

The story of America's military women begins with the Revolutionary War. The constant manpower shortages were cause for women's participation during

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<sup>4</sup>Defense Advisory Committee on Women in the Services, Utilization of Women Indicator Report (Washington, D.C.: Department of Defense, 1996), 1.

<sup>5</sup>Ibid., 58.

the Revolutionary War, and sustaining Washington's army in the field would have been next to impossible without women. It was common practice for wives, lovers, sisters, and daughters to follow the army, providing laundry, nursing, comfort, and cooking services.<sup>6</sup> Women were also hired for medical service. Although paid a wage by the army, they were civilians with no military status.

Despite military regulations that called for service by men only, some women would get around the rules, masquerading as young men or boys.<sup>7</sup> Many of these women were noted for serving very well. For example, in 1780, Deborah Samson joined the 4th Massachusetts Regiment as "Robert Shirtliffe" and served three years as a soldier, fighting in a number of battles.<sup>8</sup> In the War of 1812, Lucy Brewer, later acknowledged by the Marine Corps as the "first girl marine," served for three years as a marine and achieved the rank of brevet colonel.<sup>9</sup>

*b. The Civil War*

In her book, Women in the Military, An Unfinished Revolution, Major General Jeanne Holm, USAF, (Ret.), tells of the service of women during the Civil War:

During the Civil War women on both sides became active on an unprecedented scale. Many of the restrictions and social conventions with respect to women's activities were set aside or simply ignored to meet the unusual functions of cooking, sewing, and foraging for supplies, many women, both black and white, served as saboteurs,

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<sup>6</sup>Jeanne Holm, Women in the Military, An Unfinished Revolution (Novato, California: Presidio Press, 1992), 4.

<sup>7</sup>*Ibid.*, 5.

<sup>8</sup>*Ibid.*

<sup>9</sup>*Ibid.*

scouts, and couriers. They burned arsenals and warehouses, and helped prisoners and slaves escape.<sup>10</sup>

Throughout the Civil War, there was a shortage of nurses for both the North and South. When efforts to obtain the needed numbers of men failed, women were recruited to serve as nurses. It was the dedication, organizational ability, and courage of these female nurses that improved patient care for the Army. Nevertheless, as in past wars, when the Civil War ended, the Army used enlisted men only for patient care in its hospitals, and the female nurses were sent home.<sup>11</sup>

*c. The Spanish-American War*

At the beginning of the Spanish-American War in 1898, the Army experienced an epidemic of typhoid fever that sent it scrambling for six-thousand or more men to handle patient care. When the army fell short of its recruiting goal, the only alternative left was to recruit women. At the request of the Surgeon General, Congress authorized the Army to appoint women as civilian contracted nurses with no military status. More than fifteen-hundred women served as nurses between 1898 and 1901 in the United States, overseas, and aboard the hospital ship, *Relief*.<sup>12</sup>

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<sup>10</sup>Ibid.

<sup>11</sup>Ibid.,8.

<sup>12</sup>Ibid.

In 1901, as a result of the outstanding contributions made by women in 1898-99, Congress established the Nurse Corps as an auxiliary of the Army.<sup>13</sup> This created only a quasi-military status for women, since these nurses still had no military rank, equal pay, retirement, or veteran's benefits. They were not legally enlisted personnel. In 1908, the Navy also established a Nurse Corps.<sup>14</sup>

Although full military status for women was not granted until 1948, these nurses were officially recognized as a necessary and permanent part of the Army and Navy; and they were allowed to provide patient care in the military hospitals even when there was no war. The Nurse Corps women were organized and ready to go when World War I began.

## **2. Two World Wars Through Vietnam**

### ***a. World War I***

During World War I, when it appeared that the United States would inevitably enter the war, Secretary of the Navy Josephus Daniels expressed some serious concerns. Although a substantial buildup of Navy forces had been authorized, Daniels was worried that there would be critical shortages of personnel.<sup>15</sup> He saw the enlistment of women as a way to avoid a manpower crisis, as he moved forward to find a way to make it happen:

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<sup>13</sup>Ibid., 9.

<sup>14</sup>Ibid.

<sup>15</sup>Jean Ebbert and Marie-Beth Hall, Crossed Currents, Navy Women from WWI to Tailhook, (Washington, D.C.: Brassey's (US), 1993), 4.

Could he legally enlist women? The 1916 legislation said that "all persons who may be capable of performing special useful service for coastal defense" could be enrolled in the Naval Coast Defense Reserve Force. Daniels triumphantly announced to his advisors, "It does not say ... anywhere that a yeoman must be a man." <sup>16</sup>

On March 19, 1917, the Bureau of Navigation notified the commandants of all naval districts that they had the authority to enroll women "in the ratings of Yeoman, Electrician (radio), or in such other ratings as the Commandant may consider essential to the District organization."<sup>17</sup> By the end of March 1917, one-hundred women had enlisted, even though war would not be declared until April 6th. On May 28th, the *New York Times* reported that a total of 725 women had enlisted in the Navy.<sup>18</sup>

Navy women, or "yeomen (F)," became the first women to be enlisted in the military and serve in an occupation other than nursing.<sup>19</sup> The most significant point about the yeomen (F) was that they served well. These women not only performed clerical duties, but were also assigned as draftsmen, translators, camouflage designers, and recruiters. This move allowed men to be freed from shore-based office jobs so that they could be assigned to combat. The Marine Corps followed the Navy's lead by enlisting women in 1918. Approximately 13,000 young women served with the Navy or Marine Corps between 1917 and 1919.<sup>20</sup>

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<sup>16</sup>Ibid., 5.

<sup>17</sup>Ibid., 6.

<sup>18</sup>Ibid., 7.

<sup>19</sup>David R. Segal and H. Wallace Sinaiko, eds., *Life in the Rank and File* (Washington, D.C.: Pergamon-Brassey's, 1986), 98.

<sup>20</sup>Ibid.

Despite the utilization of women by the Navy and Marine Corps, the War Department held firm to its decision that the Army could not legally enlist women for any purpose. Although all the services were working under the same legal constraints, the differences between the action taken by the services regarding the enlistment of women was reflected in the attitudes of the service secretaries.<sup>21</sup> While the Secretary of the Navy recognized the need for women in the military, the Secretary of War was opposed to the idea. The Secretary of War, Newton Baker, rejected the idea of a dedicated Corps for women, considering it “unwise, undesirable, and exceedingly ill-advised.”<sup>22</sup> Therefore, after the war ended, enlisted women in the Navy and Marine Corps were discharged. In 1925, the wording in the 1916 Naval Reserve Act was changed to limit eligibility for service to men only. This ensured that the Navy Department could not enlist women again without Congressional approval.

*b. World War II*

With the attack on Pearl Harbor on December 7, 1941, and the beginning of another world war, resistance to enlisting women abated once again. Military leaders recognized that, if U.S. forces were drawn into another major conflict, there would be manpower shortages similar to those experienced in World War I. Mobilization of women, however, now required legislative action due to the Naval Reserve Act of 1925. In July 1942, legislation established the Navy WAVES (Women Accepted for Voluntary Emergency Service). The WAVES differed from the Army’s two-month-old WAAC (Women’s Army Auxiliary Corps) in that Navy

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<sup>21</sup>Holm, 14.

<sup>22</sup>Ibid.

women were given full military status, while Army women were members of an auxiliary.<sup>23</sup>

As war casualties increased, more men were needed for combat, and the demand for women in non-traditional occupations increased. Women were called to serve in virtually every occupation except direct combat. Jobs for women included metalsmiths, camera repairmen, printers, machinist's mates, control tower operators, Link-trainer instructors, naval air navigators, radio operators and repairmen, parachute riggers, gunner instructors, engine mechanics, celestial navigation instructors, and aerophotographers.<sup>24</sup> When peace came in 1945, 94,000 women were serving in the WAVES.<sup>25</sup> A total of 350,000 women served in the military during World War II, representing about 2.3 percent of the force.<sup>26</sup>

At the end of the war, military leaders recognized the value of having women serve on a "permanent" basis; however, these leaders still did not want women going into formerly all-male fields. No one had done an assessment of the cost of women's programs during the war; but, in subsequent years, these costs became a recurring theme. The underlying assumption was that women cost more than men, so their utilization should be limited. Yet, as later studies eventually revealed, the reverse had been the case:

In its postwar planning, the Army General staff compiled estimated relative costs of male and female soldiers which clearly showed that one on-board woman had cost less primarily because of the higher costs associated with dependents of men. The Army estimated that in the

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<sup>23</sup>Segal and Sinaiko, 98.

<sup>24</sup>Holm, 60.

<sup>25</sup>Segal and Sinaiko, 98.

<sup>26</sup>Holm, 100.

future it could save the taxpayers \$7.7 million a year for each 100,000 women substituted for an equal number of male noncombatants.<sup>27</sup>

Additionally, it could not be overlooked that the WAVES and other military women, unlike the Yeomen (F) of World War I, were voters as well as veterans. In June 1948, after long and heated debate, the Women's Armed Services Integration Act (Public Law 625) was passed, giving women permanent status in the Army, Navy, Marine Corps, and Air Force. The act, however, restricted (1) the total number of women in the services (2-percent ceiling), (2) the kinds of jobs women could hold, and (3) the military rank that women could achieve.

Table 1 shows the ratings (Navy Occupations) held by women in 1948, and indicates which ratings women would be restricted to according to a 1950 proposal by Navy analysts.

**Table 1. Ratings Held by Navy Enlisted Women in 1948,  
Grouped by Bureau of Naval Personnel Criteria**

Highly Desirable

Aviation Electronics	Instrumentman	Opticalman
Aviation Technician	Commissaryman	Lithographer
Aviation Mate	Ships Serviceman	Printer
Aviation Mechanic	Disbursing Clerk*	Yeoman
Av. Storekeeper*	Air Controlman*	Radioman*
Communication Tech*	Parachute Rigger*	Draftsman*
Device Trainer*	Dental Tech*	Journalist*

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<sup>27</sup>Ibid., 102.

**Table 1 (Continued)**

Photographer's Mate*	Personnelman*	Storekeeper*
Aerographer's Mate*	Hospital Corpsman*	Teleman*

Desirable

Fire Control Tech	Av. Machinist's Mate	Electronics Tech
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Acceptable

Aviation Ordnanceman	Patternman	Musician
Machinery Repairman	Radarman	Sonarman

Source: Jean Ebbert and Marie-Beth Hall, Crossed Currents. Navy Women from WWI to Tailhook, (Washington, D.C.:Brassey's(US), 1993),28.

\* Ratings to which women were to be restricted according to a 1950 proposal by Navy analysts.

*c. The Korean War*

When the Korean War broke out in June 1950, there were only 22,000 women on active duty, representing less than one percent of the total force. A third of these women were in the health professions.<sup>28</sup> Although military leaders were willing to utilize more women, they were unable to reach their recruiting goals for a variety of reasons: the American public was a little "war weary" and generally did not support the Korean conflict; the low military pay and quality of life for women could not compete with opportunities in private industry; and many women were screened out due to the higher entrance standards established for women as compared with those for men.

The Navy was more conservative than the other services in its recruiting goals. It sought to enlist 11,000 women for active duty, and eventually recruited

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<sup>28</sup>Ibid., 149.

8,000 by June 1952.<sup>29</sup> By the time a cease-fire agreement was reached in 1953, the Navy was pressured to expand by altering two long-standing policies regarding women: married women would no longer be allowed to leave the service upon request; and the minimum enlistment age for women was dropped from twenty to eighteen.<sup>30</sup>

As the 1950s drew to a close, the number of women in the military fell to 26,400 from a combined wartime high of 48,700.<sup>31</sup> Although the ceiling for enlistment of women remained at 2 percent and had not been reached, the services were unwilling to recruit more women. The women who did remain on active duty during the 1950s performed stateside administrative and clerical duties, with the exception of medical specialists who provided care overseas.

*d. The War in Vietnam*

As the war in Vietnam escalated in 1965, and men were seemingly reluctant to fight in an unpopular war, interest in military women began to rise once again. As in previous wars, the decision to mobilize women came only after other alternatives were explored. In 1966, over 114,000 military jobs were converted to civilian status, and enlistment standards for well over 200,000 men were significantly lowered.<sup>32</sup> Yet, even these actions could not generate the necessary manpower. The increasing manpower demands of the war in Vietnam eventually put pressure on the Department of Defense to reexamine its policies regarding the utilization of women.<sup>33</sup>

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<sup>29</sup>Ebbert and Hall, 130.

<sup>30</sup>Ibid.

<sup>31</sup>Holm, 157.

<sup>32</sup>Holm, 187.

<sup>33</sup>Ibid.

In 1967, the military manpower shortages led President Lyndon B. Johnson to sign Public Law 90-130. This legislation removed restrictions on the career service and promotion of military women as well as the 2-percent ceiling. As Major General Holm later wrote, "while it constituted an important step forward, the new law was a sign of its time and in no way signaled a major break with the conservative traditions of the military....The essentially masculine character of the military profession and the unequal status of women within it were never challenged."<sup>34</sup> As Captain Kelleher, one of the first six women commanders promoted to captain, explained, being selected for promotion was one thing; actual employment as a captain turned out to be another:

When the legislation...was introduced, the Navy was very supportive--or, at least more supportive than I expected. Then came reality--they really hadn't planned for our utilization as I rapidly found out. We were removed from the Women Officer Detailer and turned over to the Captain (non-aviator) Detailer. Since I was in a Commander billet and coming up for rotation in the not-too-distant future, I made an appointment to meet with him. I had two sub-specialty designators--Personnel Management and Computer Systems Management, so I thought there should be some shore job in those areas I could fill. Guess what he said? "You'll have to find someone who will take you." For once, I held my Irish temper and went on my way. Subsequently I heard the Director of the Department of Defense (DoD) Computer Institute had put in for retirement. Since I also had a Master's Degree in Education from Stanford, I thought I was reasonably qualified. BuPers was the DoD manager of that command, and the folks in training were immediately supportive and my name went forward. The incumbent immediately withdrew his retirement papers -- *he* wasn't going to be replaced by a *women*!<sup>35</sup>

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<sup>34</sup>Ebbert and Hall, 161.

<sup>35</sup>Ibid., 162.

Of the nearly 6,000 military women who served in Vietnam, 80 percent were either nurses or medical specialists.<sup>36</sup> The Marine Corps, which had no nurses, sent 36 women to Vietnam; and, although the Navy sent hundreds of women nurses into Vietnam, only nine women line officers were selected for duty in Vietnam from the many who requested assignment there.<sup>37</sup> No enlisted Navy women were selected to serve in Vietnam.<sup>38</sup>

### **3. The Decades Ahead**

#### ***a. The Post-Vietnam Era***

As the war in Vietnam ended, Congress was debating passage of the Equal Rights Amendment (ERA), President Richard Nixon was contemplating an All Volunteer Force, and women began to sue the military for sex discrimination in its policies and practices. The services became convinced that it would be better for them to review their policies and programs for women before the courts forced them to do it.

In August 1970, the Chief of Naval Operations, Admiral Elmo Zumwalt, issued "Z-Gram 116." This message to the fleet would have a lasting impact on the retention, career opportunities, and assignment of women in the Navy. It stated that all laws, regulations, and policies would be examined to "eliminate any disadvantages to women resulting from either legal or attitudinal restrictions."<sup>39</sup> The following actions were taken:

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<sup>36</sup>Holm, 214-218.

<sup>37</sup>Ebbert and Hall, 156-158.

<sup>38</sup>Ibid., 158.

<sup>39</sup>Ibid., 163-164.

- Enlisted Women were authorized limited entry to all ratings (or occupations).
- Under a pilot program, a limited number of officer and enlisted women were assigned to the crew of the *USS Sanctuary*, a noncombatant.
- Women were assigned as commanding officers of units ashore.
- The Navy Reserve Officer Training Corps (NROTC) program was opened to women in fiscal year 1974.
- Qualified women were permitted to be considered for promotion to the rank of rear admiral.
- Women were selected to study at the joint service colleges.

The Navy was later compelled to address policy issues relating to women's private lives, such as the status of spouses, pregnancy, the custody of minor children, and lesbianism.<sup>40</sup>

By 1973, the draft had ended and the All-Volunteer Force (AVF) became a reality. In Life In The Rank And File, Martha A. Marsden explains why policies regarding the utilization of women would have to change with the transition to an AVF:

With this major shift, Congress and defense planners had to face changing manpower needs, projections of a declining pool of military-eligible young adults, and a social environment in which women were playing larger and more diversified roles. Because of these factors, and the critical need to recruit sufficient numbers of qualified personnel to fill the increasingly technical jobs in the AVF, the decision was made to expand greatly the use of women in all the military services.<sup>41</sup>

During the transition to an all-volunteer military (1972-1976), the number of women on active duty more than doubled, reaching 109,000, or just over

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<sup>40</sup>Ibid., 173.

<sup>41</sup>Segal and Sinaiko, 66.

5 percent of the force by the end of fiscal 1976.<sup>42</sup> In spite of these figures and studies conducted by groups such as the Brookings Institution, many in the Pentagon continued to have misgivings about the future sustainability of the AVF and the wisdom of expanding roles for women.<sup>43</sup> Some viewed these as serious threats to readiness. So, with the 1976 Presidential election and a new administration, the services took a wait-and-see attitude toward further expansion.

Within a week of taking office in 1977, Secretary of Defense Harold Brown requested a study that would provide data to evaluate the services' growth plans for their women's programs and to form a basis for future policy decisions. A Navy commander, Dr. Richard W. Hunter, was put in charge of the project. The central issue of Hunter's paper was DoD's ability to meet enlisted manpower requirements: "This is where the all-volunteer force will succeed or fail, and this is where most of our recruiting money and effort are aimed."<sup>44</sup>

Hunter concluded that the recruitment of more high school graduate women for active duty in the AVF could have two effects: (1) improve quality; or (2) save money.<sup>45</sup> Hunter's analysis revealed that the quality of new recruits had increased since the draft ended. One contributing factor was the expanded recruitment of women who were required to meet higher standards than men. More than 91 percent of female recruits were high school graduates, compared with just 67 percent of the men, and all the female recruits had average or above-average scores

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<sup>42</sup>Martin Binkin, Who Will Fight the Next War? (Washington, D.C.: Brookings Institution, 1993), 7.

<sup>43</sup>Holm, 251.

<sup>44</sup>Ibid., 253.

<sup>45</sup>Ibid.

on the military's enlistment test.<sup>46</sup> Hunter's study also revealed that high-quality women and low-quality men were cheaper to recruit than additional high-quality men. Thus, while the 1972 decision to expand the utilization of women was based on the AVF's personnel needs, Hunter's study and those of others, based on the volunteer recruiting environment, strongly suggested that budgetary factors supported the expanded use of women.<sup>47</sup> By 1980, there were 173,000 women on active duty in the U.S. military, making up 8.5 percent of the force.<sup>48</sup>

*b. The Eighties to Present Day*

During the decade of the 1980s, the discussion on women in the military shifted from how many women should serve to how should women serve. More specifically, the question was: how should the services apply combat exclusion laws? Throughout the 1980s and into the 1990s, women served in combat areas and, in some cases, combat positions. In operations Urgent Fury in Grenada (1983) and Just Cause in Panama (1989), women performed as helicopter pilots, crew chiefs, maintenance personnel, intelligence specialists, signal and communication specialists, truck drivers, and medical personnel.<sup>49</sup> By the end of 1987, there were over 350,000 women on active duty and in the reserves meeting the needs of the services.<sup>50</sup>

Many military leaders and politicians of the time realized that the continued success of the AVF depended upon the expansion of women's opportunities in the military. But this meant wrestling with the definition of combat. In September 1987, Defense Secretary Casper Weinberger established a DoD "Task

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<sup>46</sup>Ibid.

<sup>47</sup>Ibid., 254.

<sup>48</sup>Eitelberg and Mehay, 151.

<sup>49</sup>Holm, 404.

<sup>50</sup>Defense Advisory Committee, 6.

Force on Women in the Military.”<sup>51</sup> The Task Force was directed to study a wide range of issues affecting women’s careers, morale, utilization, and quality of life. The Task Force reported that the services were not consistent in their interpretation or application of the combat exclusion laws in their assignment of women. It recommended that DoD adopt a clear standard for evaluating which positions or units should be closed to women.<sup>52</sup>

Based on the Task Force recommendations, the DoD “Risk Rule” was established in 1988 to aid the services in identifying the combat support units in which women could serve. By standardizing the method to identify combat support positions, many new job opportunities were opened for women. All services were subject to the DoD Risk Policy in their assignment of women from 1988 until January 1994, when the Risk Rule was modified.<sup>53</sup>

In the aftermath of the Persian Gulf War, where over 40,000 women participated, the country became engrossed with the issue of whether women should serve in combat. In response, Congress worked on repealing combat exclusion laws.

The 1991 Defense Authorization Act, Public Law 102-190, included two Senate amendments that would dramatically affect the utilization of women in the military. The first amendment repealed restrictions on women flying combat aircraft, and the other amendment established the Presidential Commission on the Assignment of Women in the Armed Forces. The commission was established for the purpose of

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<sup>51</sup>Holm, 395.

<sup>52</sup>Ibid., 396.

<sup>53</sup>Ibid., 397.

assessing the laws and policies restricting the assignment of women, and to make recommendations to the President.<sup>54</sup>

The Presidential commission came up with seventeen issues and corresponding recommendations that they believed to be central to the review of combat exclusion policies. Regarding combat-specific issues, the commission voted to retain exclusion laws pertaining to combat aircraft, ground combat, and special operations. The commission also voted to repeal the exclusion laws pertaining to the service of women on Naval combat vessels.

After a review of the commission's report, on November 10, 1993, President Clinton signed the Fiscal Year 1994 National Defense Authorization Act. Section 541 of the act opened over 250,000 combat positions to women, including aircraft and naval vessel assignments. The only combat positions that remain closed as of 1997 are ground combat and special operations.

#### **4. Summary**

Women have come a long way since the American Revolution. Some women disguised themselves as boys to serve in America's early wars. Today, women are recognized as service members entitled to the same pay, benefits, and career paths as their male counterparts. History indicates that, while they were not always fully appreciated, women have always willingly and capably participated in every U.S. military conflict, making contributions that tended to increase the probability of the military's success. Even though women's presence in the military continues to be viewed with some skepticism, most observers agree that women are essential personnel of the armed forces.

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<sup>54</sup>Presidential Commission on the Assignment of Women in the Armed Forces, Report to the President (Washington, D.C.: U.S. Government Printing Office, 1992), 2.

## **B. MILITARY ATTRITION STUDIES**

Attrition, the discharge of personnel prior to the expiration of their obligated service, is well-recognized as a serious problem for the military. Reasons for the early separation of personnel include medical problems, poor fitness, failures to adapt, and disciplinary problems. In 1994, attrition of enlisted personnel moved from a chronic state to an acute worry as the services experienced a steady increase in their rates since 1988 and a General Accounting Office (GAO) report claimed that "the services' high rates needlessly and substantially inflate recruiting costs."<sup>55</sup> This information comes at a time when all services are being asked to improve their effectiveness and cut costs.

In 1991, the rate of enlisted attrition at 36 months after entry was 29.5 percent across all services and levels of education.<sup>56</sup> The Navy's attrition rate is currently such that recruiters must ship over 47,000 enlisted recruits to boot camp just to get 31,000 who will stay in until their initial tour of duty has expired.<sup>57</sup>

Military personnel attrition is a phenomenon that has been studied for several decades. This section provides a literature review of some of the more recent analyses.

### **1. Accession Management Studies**

There have been numerous studies on military attrition with various measurable variables. Most of these variables are associated with the recruiting or accession process. Specifically, demographic variables such as race, level of education, Armed Forces Qualification Test (AFQT) score, age at initial training, and

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<sup>55</sup>Clinton B. Walker, Attrition and Retention in UTP-3 Nations (Washington, D.C.: U.S. Army Research Institute for the Behavioral and Social Sciences, 1996), 1.

<sup>56</sup>*Ibid.*, 8.

<sup>57</sup>Bureau of Naval Personnel (Pers-222), Enlisted Strength Planning (Washington, D.C.: 1996), 4.

region of origin have been studied, and all appear related to military attrition.<sup>58</sup> These studies have found that more highly-educated (high school graduate or above), "smarter" (higher scoring on AFQT), African-American, and Hispanic enlisted recruits are less likely to "attrite" than are others. It was also found that military recruits from the central region of the country have higher attrition rates than do recruits from other areas.<sup>59</sup>

The single strongest predictor of attrition is a person's level of education -- specifically, whether the recruit earned a diploma from a full-time, accredited high school.<sup>60</sup> For example, from 1988 to 1991, the first-term attrition rate for high school graduates was 28 percent; at the same time, the rate for non-graduates was 52.9 percent.<sup>61</sup> All services use this variable in the selection process as an indicator of a recruit's likelihood for attrition, and all services attempt to bring in as few non-graduates as possible. From 1994 to 1996, the percentage of recruits with a high school diploma held steady at 96 percent.<sup>62</sup> Research on this variable continues, because the attrition rate has not declined proportionally with the increased number of high school diploma graduates recruited by the services.<sup>63</sup>

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<sup>58</sup>Some of the earlier attrition studies include: Timothy W. Cooke and Aline O. Quester, "What Characterizes Successful Enlistees in the All-Volunteer Force," Social Science Quarterly, Vol. 73, No. 2, (June 1992); Richard Buddin, Analysis of early Military Attrition Behavior (Santa Monica, Calif.: RAND Corporation, 1984), R-3069-MIL.; and Charles C. Moskos, "The Enlisted Ranks in the All Volunteer Army," The All Volunteer Force and American Society (Charlottesville, Va.: University Press of Virginia, 1978).

<sup>59</sup>Buddin, 3.

<sup>60</sup>Walker, 9.

<sup>61</sup>Ibid., 8.

<sup>62</sup>Navy Times (Arlington, Va.), 2 December 1996, 4.

<sup>63</sup>Walker, 9.

## 2. Studies Across Gender and Reasons for Separation

### a. General Accounting Office (GAO) Report

In the July 1990 GAO report, Women in the Military: Attrition and Retention, attrition rates for enlisted men and women in the four services were compared, and the primary separation categories were identified. This review covered fiscal years 1980 through 1988. In comparing the attrition rates for men and women, GAO found the following:

Women generally leave the service at higher rates than men. The overall attrition loss for enlisted women was 48.6 percent, or 4.5 percentage points higher than the 44.1 percent rate for men. However, the basic pattern of attrition losses for both men and women was similar. That is, most first term losses for both men and women occurred in the first 3 months when recruits generally have basic training, and in the last 3 to six months when people may leave the service early for reasons such as school attendance. In the intervening periods of the enlistment term, measured in 3-month intervals, both men and women left the services at relatively steady rates, ranging primarily from 1 to 4 percent of the total group that entered the service in a given fiscal year. Women's rates tended to be slightly higher than men's.<sup>64</sup>

With regard to enlisted separation categories, GAO results indicate:

Attrition losses during the first 6 months, for both men and women, were primarily for (inadequate) entry level performance. During the last 6 months, separations for both men and women were primarily for successful completion of the enlistment term, although many separations were early releases. For each 6-month period in between, men were primarily separated involuntarily for misconduct, unsatisfactory performance, and/or drugs or alcohol abuse, while women left primarily at their own request because of pregnancy. When we removed women's voluntary separations for pregnancy from the

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<sup>64</sup>General Accounting Office, Women in the Military: Attrition and Retention, GAO/NSIAD-90-87BR (Washington, D.C.: Government Printing Office, 1990), 2.

data, men's attrition was generally higher than women's, although the differences were slight.<sup>65</sup>

Thus, according to this report, while women tend to leave the military at a higher rate than men (4.5 percentage points higher), women are leaving at about the same point in their enlistment as their male counterparts. This suggests that, as women are exposed to the military way of life, their reaction to the experience is not much different than that of men. The report also indicates that separation from the military for pregnancy is the reason for higher rates of attrition among women.

***b. RAND Corporation Study***

In 1991, the Assistant Secretary of Defense (Force Management and Personnel) sponsored a RAND corporation study, Why Recruits Separate Early. This study sought "to determine whether the prevalence of various *reasons* for an early separation are related to recruit characteristics such as gender, race, service, year of entry, education, and military occupational specialty (MOS)."<sup>66</sup>

RAND researchers reviewed the personnel records of 1,134 recruits who entered the military in either fiscal years 1979 or 1985 and separated within 35 months of entering. These records were obtained from the National Personnel Records Center. The researchers also employed a Defense Manpower Data Center database containing the official justification for early separation in the form of Inter-Service Separation Codes. The results of this study indicate that most recruits who left the military early did so for a combination of two or more different reasons. One reason, cited almost always as part of any combination, was a "work/duty problem." This appeared to be a symptom of another issue, such as alcohol abuse or a negative attitude, rather than the primary reason for discharge. The next three most-cited factors leading to early separation were training problems, minor offenses, and mental health problems. The research also revealed:

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<sup>65</sup>Ibid., 3.

<sup>66</sup>Klein, Hawes-Dawson, and Martin, 5.

The prevalence of a particular category of separation reason was usually *unrelated* to a wide variety of factors, including: the recruit's service, gender, or race; the fiscal year in which the recruit entered the service (1979 or 1985); entry into a military occupational specialty (MOS) with a relatively high attrition rate; and when during the first 35-month enlistment period the attrition took place. For example, although high school graduates were less likely than nongraduates to separate early, little difference was found between the two groups in the prevalence of particular reasons that might distinguish the early discharges that occurred in each group.

Three relationships between separation reasons and other factors were established: (1) certain types of mental health problems were likely to surface early rather than later during a recruit's first term of enlistment; (2) women were more likely than men to have such problems; and (3) men were more likely than women to separate because of use of alcohol, drugs, and both minor and major offenses. Also, the longer a recruit stayed in the service, the more likely a recruit separated for one or more of these four reasons.<sup>67</sup>

*c. Center for Naval Analyses Study*

In 1992, the Center for Naval Analyses (CNA) published an analysis of women's "survival rates" during their first year and first term of service. The study, titled Survival Patterns for First-Term Navy Women, explored the following issues:

- Whether women who enter the Navy in sea-intensive/low-percent-female ratings have a lesser tendency to survive in the Navy than their counterparts in shore-intensive or sea-intensive/high-percent-female ratings
- Whether the women in sea-intensive/low-percent-female ratings are more apt to switch out of these ratings than females in shore-intensive or sea-intensive/high-percent-female ratings.<sup>68</sup>

The study also compared female behavior with male behavior across Navy ratings.

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<sup>67</sup>Ibid., 6.

<sup>68</sup>Center for Naval Analyses, Survival Patterns for First-Term Navy Women, (Alexandria, Va.: Department of the Navy, 1992) 3, CRM 92-120/December 1992.

Two data sets were constructed for Navy enlisted accessions from fiscal years 1984 through 1990. The first data set consisted of four-year obligators (4YOs) and five-year obligators (5YOs) who entered the Navy in fiscal years 1987 through 1990. The second data set contained both 4YOs and 5YOs who entered in fiscal years 1984 through 1987. Each person was assigned to one of the three ratings groups.

The men and women in the first data set were followed for 12 months, and their ratings on entry were compared with their ratings at the end of the 12-month period. The same was done for the personnel in the second data set, with comparisons being made at the end of a 45-month period. The following results were reported:

The differences in behavior in the three groups--shore-intensive, sea-intensive/high-percent-female, and sea-intensive/low-percent female--were not as great as initially expected.

For the 12-month analysis, 89.2 percent of the women entering the Navy in shore-intensive ratings survived one year. For females entering in the sea-intensive rating groups, the rates were 88.6 and 86.6 percent for high-percent-female and low-percent-female ratings groups, respectively. For the males entering the Navy in the shore-intensive ratings, 87.9 percent survived for one year. More survived for those entering in the sea-intensive ratings group, however. The rates for males were 89.5 and 88.4 percent for the high-percent-female and low-percent-female rating groups, respectively.

For the 45-month analysis, the differences in the survival rates were somewhat greater. Females entering in shore-intensive ratings survived at a rate of 74.2 percent, compared with 70.4 percent of the females entering in the sea-intensive/low-percent-female ratings. The survival rates for males were 72.0 and 72.4 percent for those entering the Navy in the shore-intensive and sea-intensive/low-percent-female rating groups, respectively.

Females in shore-intensive ratings were more likely to remain in their original rating than females in sea-intensive ratings. Furthermore, in shore-intensive ratings, females were more likely than males to survive in their rating of entry. However, the opposite was true for both the high- and low-percent-female sea-intensive ratings: Males were more likely to survive in their rating of entry than females. Even after 45 months, the differences are not much larger. Considering that many

people who changed ratings still stayed in the same rating group, the effective differences are even smaller.<sup>69</sup>

In the 12-month analysis, it was determined that women experienced higher service completion rates in the shore-intensive occupations, when compared with their completion rate in sea-intensive ratings; nevertheless, only 2.6 percentage points service completion rates across occupations. Men, on the other hand, experienced higher completion rates in sea-intensive occupations. However, the difference in service completion rates across occupations was only 1.6 percentage points.

In the 45-month analysis, women still preferred and succeeded to a greater degree in shore-intensive jobs; but the difference in completion rates across occupations had increased to 3.8 percentage points. Although men continued to show a preference for sea-intensive ratings, the completion rates across occupations were nearly identical.

*d. Defense Advisory Committee Report*

The September 1996 Defense Advisory Committee on Women in the Services (DACOWITS) report, Utilization of Women Indicator Report, provides statistical information on the accession, assignment, retention, and career advancement of military women. Defense Manpower Data Center (DMDC) files, provided by the military services, were used in the analysis. In analyzing attrition among first-term enlisted personnel entering the services in fiscal years 1987, 1991, and 1994, researchers came to the following conclusions:

Among recruits who entered active duty in 1987, the total attrition rate for men (at any point up to 48 months) was about 31 percent, compared with a rate of 40 percent for women. Among recruits who entered in 1991 (as of 1995), first-term attrition was 33 percent for men and 45 percent for women. Total attrition for 1991 female entrants was highest in the Marine Corps (55 percent) and lowest in the Navy (37 percent).

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<sup>69</sup>Ibid., 4.

It is interesting to note that the 48-month attrition rate among women who entered the Navy in 1991 is similar to that of their male counterparts in the Army and the Marine Corps.

Data on the reasons for attrition in the three cohorts suggest that the higher attrition rates of women are mainly due to pregnancy. In fact, the pregnancy discharge rate accounted for a 13-percentage-point difference between men and women in the 1987 cohort and a 12-percentage-point difference between those who entered the military in 1991. This is almost precisely the margin of difference between men and women in their total rates of attrition. At the same time, women are generally more likely to be discharged for failure to meet minimum behavioral or performance criteria. It is also interesting to note that the gender disparity in early attrition rates (up to 12 months) is due mainly to medical disqualification and, to a lesser extent, failure to meet minimum behavioral or performance criteria (probably attrition during training).<sup>70</sup>

Tables 2 and 3 illustrate the results of the study.

**Table 2. Attrition Rates at 0-48 Months of Service by Gender  
Fiscal Years 1987 and 1991**

<u>Service</u>	<u>FY87</u>		<u>FY91</u>	
	% of Men	% of Women	% of Men	% of Women
Army	31.24	42.95	35.52	50.35
Navy	33.25	37.37	31.20	36.66
Marine Corps	34.34	52.72	34.27	54.80
Air Force	24.08	36.07	30.40	41.50
Total	30.98	40.32	33.16	44.99

Source: Defense Advisory Committee on Women in the Services, Utilization of Women Indicator Report (Washington, D.C.:Department of Defense, 1996), 15.

<sup>70</sup>Defense Advisory Committee, 7.

**Table 3. Distribution of Attrition Rates (0-48 Months) by Reason, Source, and Gender, Fiscal Years 1987 and 1991**

<u>Service</u>	<u>Reasons</u>	FY87		FY91	
		% Men	% Women	% Men	% Women
<b>Army</b>	Medical Disqualification	7.7	8.9	8.6	11.4
	Failure to Meet Minimum				
	Behavior and Performance	18.6	14.9	22.6	19.4
	Other Separations (Preg., etc.)	1.2	15.7	1.8	15.3
<b>Navy</b>	Medical Disqualification	5.5	6.5	4.3	6.3
	Failure to Meet Minimum				
	Behavior and Performance	19.9	13.2	18.7	13.8
	Other Separations (Preg., etc.)	4.1	16.1	5.1	15.1
<b>Marine Corps</b>	Medical Disqualification	12.0	12.0	15.7	20.1
	Failure to Meet Minimum				
	Behavior and Performance	17.6	18.7	14.9	17.2
	Other Separations (Preg., etc.)	0.3	19.7	0.7	15.7
<b>Air Force</b>	Medical Disqualification	3.9	6.7	4.4	10.4
	Failure to Meet Minimum				
	Behavior and Performance	16.1	13.8	16.2	15.1
	Other Separations (Preg., etc.)	2.5	14.1	8.2	14.3
<b>Total</b>	Medical Disqualification	6.9	7.9	4.4	10.4
	Failure to Meet Minimum				
	Behavior and Performance	18.5	14.4	19.2	16.9
	Other Separations (Preg., etc.)	2.5	14.1	8.2	14.3

Source: Defense Advisory Committee on Women in the Services, Utilization of Women Indicator Report (Washington, D.C.:Department of Defense, 1996), 17.

### 3. Summary

Attrition is a complex phenomenon that can probably only be explained by considering individual, situational, organizational, and other environmental variables. This is what many military attrition studies have attempted to do. While most of the studies have aimed to minimize the rate of attrition primarily through evaluation of military selection criteria, others have analyzed military attrition across gender and investigated the underlying reasons for recruits leaving early. Several recent studies indicate the following: women tend to have higher attrition rates than do men, and the higher rates of women are due largely to pregnancy-related reasons; women are more

[illegible]



### **III. DATA AND METHODOLOGY**

The primary objective of this research is to identify the possible reasons for female attrition and whether some of these reasons are more prevalent than others. It is hoped that this research will provide additional information for the development of effective policies and programs to reduce attrition by enlisted women in the Navy. The data for this thesis were provided by the Defense Manpower Data Center (DMDC) in Monterey, California. The data consist of Navy personnel entry cohort files for fiscal years 1986 through 1990. The data files were provided by DMDC in raw form. A SAS System program was written to read and analyze the information. The SAS System is an integrated system of software, providing complete control over data access, management, analysis, and presentation.<sup>71</sup> Various SAS procedures were utilized to create statistical tables.

#### **A. DATA SET**

The data set constructed for the analysis consists of 421,016 active duty, non-prior service Navy personnel who enlisted in fiscal years 1986 through 1990. Women made up 10.6 percent of this sample.

#### **B. METHODOLOGY**

The 1986 through 1990 entry cohorts were used to identify personnel who left the Navy prior to the expiration of their obligated service over a 48-month period from the time at which they entered active duty.

Cross-tabulations were employed to answer the following primary research questions:

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<sup>71</sup>Sandra D. Schlozhauer and Ramon C. Littell, SAS System for Elementary Statistical Analysis (Cary, North Carolina: SAS Institute Inc., 1995), 17.

- What are the most common reasons for early separation among enlisted women in the Navy across occupations? How do these reasons compare with those of men?
- Are the major reasons for early separation in occupations with relatively high attrition rates the same as those in occupations with relatively low attrition rates?
- Are the most prevalent reasons for early separation in occupations with a high percentage of women the same as those in occupations with a relatively low percentage of women?

### C. VARIABLE DEFINITION

The following variables were utilized to conduct cross-tabulations: SEX, OCCAT, and REASON. SEX is a binary variable with a value of 1 if the person is male, and a value of 2 if the person is female. The other two variables, OCCAT and REASON, were constructed using Department of Defense (DoD) information.

The variable OCCAT consolidates Navy enlisted occupations into job categories found in the DoD Occupational Conversion Index.<sup>72</sup> The following is a description of the contents of each category:

- The **“Infantry, Gun Crews, and Seamanship Specialists”** category includes individual weapons specialists and crew-served artillery specialists, amphibious crewman, and specialists in seamanship.
- The **“Electronic Equipment Repairer”** category includes specialists in the maintenance and repair of various types of electronic and allied equipment, including radio, radar, navigation, weapons, and computers, among others.
- The **“Communications and Intelligence Specialists”** category includes the operation and monitoring of radio, radio teletype, radar, sonar and allied communications and intelligence consoles. This category also includes the gathering and interpretation of photographic, electronic, and documentary intelligence.

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<sup>72</sup>Office of the Assistant Secretary of Defense, Occupational Conversion Index: Enlisted/Officer/Civilian, (Washington, D.C.: Government Printing Office, 1993), DoD 1312.1-1.

- The “**Health Care Specialists**” category includes specialists in patient care and treatment, ancillary medical support, and in technical and related medical and dental services, administration and logistics.
- The “**Other Technical and Allied Specialists**” category includes specialists in technical and professional-type skills not elsewhere classified. These skills include photography, cartography, meteorology, ordnance disposal, laboratory analysis, and music, among others.
- The “**Functional Support and Administration**” category includes general administrative, clerical and personnel specialists. This category also includes administrative specialists in data processing, information, and related areas, and functional support specialists in areas such as supply, transportation, and flight operations.
- The “**Electrical/Mechanical Equipment Repairer**” category includes specialists in the maintenance and repair of electrical, mechanical, hydraulic, and pneumatic equipment.
- The “**Craftsmen**” category includes the formation, fabrication, and installation of structures and components, the installation and maintenance of utilities, and related trades and crafts.
- The “**Service and Supply Handlers**” category includes personnel involved in protective and personal services and non-clerical personnel involved in warehousing, food handling, and motor transportation.
- The “**Non-Occupational**” category includes patients and prisoners, bootcampers and other personnel in a training status, or other enlisted and civilian personnel and designators of a non-occupational nature.<sup>73</sup>

Navy enlisted occupations are identified by ratings that indicate the general field in which the individual has gained expertise. Table 4 displays the categories within the OCCAT variable, and the ratings found in each category.

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<sup>73</sup>Ibid.

**Table 4. OCCAT Variable Category and Ratings**

<b>Category</b>	<b>Ratings</b>
Specialist Infantry, Gun Crews and Seamanship	Gunner's Mate (GM), Airman (AN) Boatswain's Mate (BM) Torpedoman's Mate (TM), Quarter Master (QM), Seaman (SN)
Electronic Equipment Repairers	Avionics Technician (AV), Fireman (FN), Electronics Technician (ET) Aviation Electronics Technician (AT), Fire Control Technician (FT), Missile Technician (MT) Sonar Technician (STG), Data Systems Technician (DS)
Communications and Intelligence Specialist	Radioman (RM), Signaller (SM) Aviation Antisubmarine Warfare Operator (AW), Operations Specialists (OS), Air Traffic Controller (AC), Electronics Warfare Technician (EW) Cryptologic Technician (CT), Intelligence Specialists (IS)
Health Care Specialist	Hospital Corpsman (HM), Hospitalman (HN), Dental Technician (DT), Dentalman (DN)
Other Technical and Allied Specialist	Photographer's Mate (PH), Illustrator Draftsman (DM), Aerographer's Mate (AG), Musician (MU)
Functional Support and Administration	Personnelman (PN), Navy Counselor (NC), Yeoman (YN), Legalman (LN), Data Processing Technician (DP), Disbursing Clerk (DK), Journalist (JO), Storekeeper (SK), Postal Clerk (PC) Aviation Maintenance Administrationman (AZ), Religious Program Specialists (RP)
Electrical/Mechanical Equipment Repairers	Aircraft Maintenceman (AF), Aviation Machinist's Mate (AD), Aviation Electrician's Mate (AE), Aviation Structural Mechanic (AM), Aviation Boatswain's Mate (AB), Weapons Technician (WT), Aviation Ordnanceman (AO), Engineman (EN), Boiler Technician (BT), Electrician's Mate (EM), Instrumentman (IM), Mineman (MN), Opticalman (OM)
Craftsmen	Machinery Repairman (MR), Builder (BU), Constructionman (CN), Engineering Aide (EA), Steelworker (SW), Equipment Operator (EO), Utilitiesman (UT), Construction Electrician (CE), Damage Controlman (DC), Hull Technician (HT), Molder (ML), Patternmaker (PM)
Service and Supply Handlers	Mess Management Specialist (MS), Ship's Serviceman (SH)
Non-Occupational	Airman Apprentice (AA), Airman Recruit (AR), Constructionman Apprentice (CA), Constructionman Recruit (CR), Fireman Recruit (FR), Seaman Apprentice (SA), Seaman Recruit (SR)

Source: Office of the Assistant Secretary of Defense, Occupational Conversion Index: Enlisted/Officer/Civilian, (Washington, D.C.: Government Printing Office, 1993), DoD 1312.1-1.

The variable REASON consolidates the DoD Inter-Service Separation Codes (ISCs) into categories. Identifying the reasons behind attrition is difficult, because there is no database on the prevalence of these reasons. This study was limited to the ISC, which indicates only the *official justification* for separation. Table 5 shows the categories within the REASON variable, and the ISCs found in each category.

**Table 5. REASON Variable Category and ISCs**

Category	ISCs
Medical Disability	Permanent Disability, Temporary Disability, Unqualified for Active Duty
Prior Medical Condition	Conditions Existing Prior to Service
Weight	Failure to Meet Weight Standards
Pregnancy	Pregnancy
Behavior Disorder	Character or Behavior Disorder
Alcohol or Drugs	Alcoholism, Drugs
Court Conviction	Civil Court Conviction, Court Martial
Homosexuality	Homosexuality
Fraudulent Enlistment	Fraudulent and Erroneous Enlistment
Minor Infractions	Pattern of Minor Disciplinary Infractions
Training Discharge	Trainee Discharge/Entry Level Performance
Other Reasons	Dropped from End-Strength, Conscientious Objector, Battle or Non-Battle Casualty, Financial Irresponsibility, Sole Survivor

#### **D. DATA LIMITATIONS**

The data base developed by DMDC for this study was limited to the following variables: male, female, occupation, separation code, and length of active military service. The data base was limited to just a few variables to restrict the size of the

computer file. Nevertheless, this limitation with respect to demographic variables, constrained the scope of cross-tabulation and frequency analysis in the study.

## IV. RESULTS

The early separation of service members is a concern for the Navy. The early separation of women in the Navy is the focus of this study. As previously noted, women account for 12.4 percent of naval personnel, and are almost completely integrated into all occupations in the Navy.

This chapter compares the attrition experiences of female and male personnel who enlisted in the Navy during fiscal years 1986 through 1990, across occupations. The first section discusses the distribution of Navy men and women, as well as the attrition rates of men and women, across occupations. The second section reviews male and female attrition rates by reasons for early separation. The last section examines the most prevalent reasons for separation, among men and women across occupations.

### A. RESULTS ACROSS OCCUPATIONS

Table 6 shows the distribution of men and women, across Department of Defense (DoD) occupational categories, in the 1986 through 1990 cohorts. The data indicate that women still tend to be clustered in the traditionally-female occupations, such as health care specialists (22 percent) and support or administration (21 percent). Women also account for less than 10 percent in the seamanship, electronic equipment repairer, electrical/mechanical equipment repairer, and craftsmen occupations, which are traditionally-male specialties in the Navy.

It should be noted that the number of women who were assigned to support/administration (6,569) is not much higher than the number of women who were assigned to electronic equipment repair (6,086). Additionally, the number of women who are electrical/mechanical equipment repairers (4,077) is very close to the

**Table 6. Distribution of Navy Enlisted Personnel by Gender, Occupational Category, and Male-Female Representation (Percent), Entry Cohorts 1986-1990**

Occupational Category <sup>a</sup>	Total Number	Number		Percent <sup>b</sup>	
		Men	Women	Men	Women
Infantry, Gun Crew, and Seamanship	40,440	36,676	3,764	90.7	9.3
Electric Equipment Repairers	98,936	92,850	6,086	93.9	6.1
Communications and Intelligence	37,604	32,762	4,842	87.1	12.9
Health Care	20,998	16,322	4,676	77.7	22.3
Other Technical and Allied Specialists	3,678	3,237	441	88.0	12.0
Functional Support and Administration	30,507	23,938	6,569	78.5	21.5
Electric/Mechanical Equipment	49,197	45,120	4,077	91.7	8.3
Craftsmen	21,713	19,928	1,785	91.8	8.2
Service and Supply Handlers	19,574	17,091	2,483	87.3	12.7
Non-Occupational	88,355	79,493	8,862	89.9	10.1
Occupation Unknown	10,014	9,079	935	90.6	9.4
<b>Total</b>	<b>421,016</b>	<b>376,496</b>	<b>44,520</b>	<b>89.4</b>	<b>10.6</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

a) These are primary occupational areas, as opposed to duty occupations.

b) Men and Women as a percent, respectively, of enlisted personnel in each category.

number of women who are health care specialists (4,676). The data reveal that, although the traditionally-male fields have a relatively small percentage of women, the overall number of women is significant when compared with the number of women in other occupations. This indicates that, although women continue to enter traditionally-female occupations, a comparatively large number are being utilized in areas that have been traditionally the domain of men.

In comparing attrition rates across occupations, Table 7 reveals that attrition rates are higher for women than for their male counterparts across each occupational category, including traditionally-female areas. At the same time, the data show that

the higher or lower attrition rates for both genders are associated with the same occupations.<sup>74</sup>

It stands to reason that the non-occupational category would have the highest attrition rate for both men (69 percent) and women (82 percent). As noted in the literature review, most attrition occurs early, during the first six months of enlistment, usually during training.

**Table 7. Ranked Attrition Rates of Navy Enlisted Personnel by Occupational Category and Gender, Entry Cohorts 1986-1990**

Occupational Category <sup>a</sup>	Attrition Rate (Percent) and Rank <sup>b</sup>	
	Men	Women
Infantry/Gun Crew/Seamanship	30.3(4)	39.3(2)
Electronic Equipment Repairers	26.6(8)	30.9(6)
Communications/Intelligence	27.7(6)	30.4(7)
Health Care	29.9(5)	33.2(5)
Other Technical Specialists	23.8(10)	27.5(9)
Support/Administration	24.2(9)	27.1(10)
Electrical/Mechanical Equipment Repairers	32.7(2)	38.1(3)
Craftsmen	27.7(7)	29.9(8)
Service and Supply Handlers	31.7(3)	34.8(4)
Non-Occupational	69.1(1)	82.2(1)
<b>Total</b>	<b>31.6</b>	<b>36.3</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

a) These are primary occupational areas, as opposed to duty occupations.

b) Attrition rate is the total number of personnel assigned to the occupational category who left within 48 months of service, divided by the total number of personnel assigned to the occupational category in the relevant cohorts. Also see footnote No. 74 below.

The non-occupational category includes recruits in boot camp and other personnel in a training status, who are not occupationally qualified. It also includes personnel who, for one reason or another, never received occupational qualifications. The data reveal that seamanship specialist, electrical/mechanical repairers,

<sup>74</sup>The "higher" attrition rates are the five highest rates. The "lower" attrition rates are the five lowest rates. The attrition rates are ranked 1-10, from highest to lowest.

service/supply handlers, and health care specialists have the next highest attrition rates for both men and women.

Relatively low attrition rates for both men and women are found in the other technical specialists, communications and intelligence specialists, and electronic equipment repairers field. Historically, these fields have been most selective with respect to aptitude and education standards.<sup>75</sup> On the other hand, the craftsmen and support/administration fields--which also have comparatively low attrition rates--have been only moderately selective in terms of occupational placement by the Navy in the past.

Occupations with the lower attrition rates (ranked 6 through 10 in Table 7) are also the same for men and women. Electronic equipment repairers, communications, craftsmen, other technical specialists, and support/administration, have the lowest attrition rates for both gender.

The data indicate that men and women tend to experience generally similar rates of attrition relative to their gender. At the same time, women tend to leave the Navy prematurely at a rate that is higher than for men in all occupational areas.

There does not appear to be a clear relationship between the percentage of women in an occupation, and the likelihood that a woman will separate early. As previously noted, women have been historically over-represented in the Navy's health care and support/administration fields--with women accounting for over 20 percent of enlisted personnel in each of these occupational categories (see Table 6). Yet, as seen in Table 7, women in health care experience an attrition rate of about 33 percent (ranked 5th). This compares with an attrition rate of 27 percent for women in support/administration--the lowest rate for women in any occupation.

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<sup>75</sup>Mark J. Eitelberg, Manpower for Military Occupations (Washington, D.C.: Office of the Assistant Secretary of Defense, Force Management and Personnel, 1988), 48.

## B. RESULTS ACROSS REASONS

The distribution of attrition rates by reason, or category of reasons, and gender is shown in Table 8. The data shows that the primary differences between the attrition rates of women and men relates to pregnancy. As seen in Table 8, the pregnancy discharge rate accounts for a 14 percentage-point difference between the attrition experiences of men and women in this study. This is a greater margin of difference than between the total rates of attrition for men and women, which is only between 4 and 5 percentage points. The data suggests that, if the pregnancy discharge rate were removed, the overall attrition rates of men would actually be higher than that of women. In reality, of course, pregnancy discharge policies do exist; and some women who are discharged for pregnancy-related reasons would likely appear in other attrition categories if the policies were changed

**Table 8. Distribution of Attrition Rates of Navy Enlisted Personnel By Separation Reason/Category and Gender, Entry Cohorts 1986-1990**

Attrition Reason/Category	Attrition Rate (Percent) <sup>a</sup>	
	Men	Women
Medical Disability	4.4	3.7
Prior Medical Condition	2.8	2.6
Weight	1.3	1.1
Pregnancy	N/A	13.9
Behavior Disorder	3.8	3.6
Alcohol or Drugs	6.8	1.9
Court Conviction	1.2	0.2
Homosexuality	0.5	0.7
Fraudulent Enlistment	4.5	3.9
Minor Infractions	0.6	0.1
Training Discharge	3.1	3.9
Other Reasons	2.7	0.8
<b>Total<sup>b</sup></b>	<b>31.6</b>	<b>36.3</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

- a) Attrition rate is the total number of personnel assigned to the occupational category who left within 48 months of service, divided by the total number of personnel assigned to the occupational category in the relevant cohorts.
- b) Percentages may not add up to totals due to rounding.

The data also suggests that women are most likely to be discharged for fraudulent enlistment, medical disability, behavior disorder, and training failure, in addition to pregnancy. The combination of these reasons account for an attrition rate of about 29 percent, or 80 percent of female attrition as a whole. Men are more likely to be discharged due to alcohol or drugs, fraudulent enlistment, medical disability, behavior disorder, and training failure. These reasons, combined, equal an attrition rate of about 23 percent, or 72 percent of male attrition as a whole.

In comparing the percentages in Table 8 across genders, a clear area of differences between men and women can be attributed to alcohol or drugs. Here, enlisted men experience an overall attrition rate of nearly 7 percent, compared with a rate for women of about 2 percent. With the exception of "other reasons" and pregnancy, all other differences between men and women are one percentage point (for "court conviction") or less.

### **C. RESULTS ACROSS OCCUPATIONS AND REASON**

The distribution of attrition rates across occupations, as well as the reasons for early separation, are presented for men and women in Table 9.

The data show, as previously noted, the importance of pregnancy related discharges in explaining the differences in attrition rates between men and women. At the same time, male-female differences are influenced by the higher rates for alcohol or drug related reasons among men.

To further analyze the reasons for female attrition across occupations, Tables 10 through 19 show the distribution of attrition rates across the major subcategories of Navy occupations.

**Table 9A. Distribution of Attrition Rates of Navy Enlisted Personnel by Occupational Category (OCC CAT), Gender, and Separation Reason/Category, Entry Cohorts 1986-1990**

<b>Men</b>							
<b>OCC CAT<sup>a</sup></b>	<b>Separation Reason<sup>b</sup></b>						
	<b>AlDr</b>	<b>FrdEn</b>	<b>MedD</b>	<b>BehD</b>	<b>TrnD</b>	<b>OTHER<sup>c</sup></b>	<b>All Reasons</b>
In/Gn/Se	5.3	6.5	5.0	3.0	8.7	1.7	<b>30.3</b>
EltEq	6.9	0.7	4.4	2.3	0.5	11.8	<b>26.6</b>
Com/Intel	6.9	0.9	4.2	2.8	0.6	12.1	<b>27.7</b>
Health	5.1	0.9	8.6	3.2	0.5	11.6	<b>29.9</b>
OtTec	7.0	0.8	2.5	1.7	0.5	11.2	<b>23.8</b>
Sup/Ad	6.4	0.7	3.0	2.3	0.7	11.8	<b>24.2</b>
El/Mec	6.6	1.0	5.7	4.7	0.8	13.8	<b>32.7</b>
Craft	8.2	0.6	3.1	2.1	0.5	13.1	<b>27.7</b>
Ser/Sup	8.3	0.8	3.8	4.1	0.6	14.0	<b>31.7</b>
Non Occ	7.5	30.9	3.2	6.3	17.4	3.8	<b>69.1</b>
<b>All</b>	<b>6.8</b>	<b>4.5</b>	<b>4.4</b>	<b>3.8</b>	<b>3.1</b>	<b>10.5</b>	<b>31.6</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

a) OCC CAT Abbreviations are as follows: Infantry/Gun Crew/Seamanship(In/Gn/Se), Electronic Equipment Repairers(EltEq), Communications/Intelligence(Com/Intel), Health Care(Health), Other Technical Specialists(OtTec), Support/Administration(Sup/Ad), Electrical/Mechanical Equipment Repairers(El/Mec), Craftsmen(Craft), Service and Supply Handlers(Ser/Sup), Non-Occupational(Non Occ).

b) Abbreviations for Separation Reasons are as follows: Alcohol or Drugs(AlDr), Fraudulent Enlistment(FrdEn), Medical Disability(MedD), Behavior Disorder(BehD), Training Discharge(TrnD).

c) OTHER consists of the following separation reasons/categories: prior medical condition, weight, court conviction, homosexuality, minor infractions, other reasons.

**Table 9B. Distribution of Attrition Rates of Navy Enlisted Personnel by Occupational Category (OCC CAT), Gender, and Separation Reason/Category, Entry Cohorts 1986-1990**

<b>Women</b>							
<b>OCC CAT<sup>a</sup></b>	<b>Separation Reason<sup>b</sup></b>						
	<b>Preg</b>	<b>FrdEn</b>	<b>MedD</b>	<b>BehD</b>	<b>TrnD</b>	<b>OTHER<sup>c</sup></b>	<b>All Reasons</b>
In/Gn/Se	15.8	6.0	3.6	4.0	5.7	4.3	<b>39.3</b>
EltEq	13.1	0.6	5.1	2.1	0.7	9.3	<b>30.9</b>
Com/Intel	14.3	0.9	3.1	3.2	0.8	8.2	<b>30.4</b>
Health	15.4	1.0	4.0	3.2	0.7	9.0	<b>33.2</b>
OtTec	11.6	0.4	3.0	4.2	0.6	7.7	<b>27.5</b>
Sup/Ad	12.1	0.8	2.5	3.0	0.5	8.3	<b>27.1</b>
El/Mec	16.4	1.0	4.5	2.6	0.8	12.8	<b>38.1</b>
Craft	12.6	0.7	4.5	3.6	0.6	8.1	<b>29.9</b>
Ser/Sup	15.3	0.9	4.1	4.1	0.6	9.9	<b>34.8</b>
Non Occ	12.5	26.8	2.2	5.9	27.8	7.1	<b>82.2</b>
<b>All</b>	<b>13.9</b>	<b>3.9</b>	<b>3.7</b>	<b>3.6</b>	<b>3.9</b>	<b>8.5</b>	<b>36.3</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

a) OCC CAT Abbreviations are as follows: Infantry/Gun Crew/Seamanship(In/Gn/Se), Electronic Equipment Repairers(EltEq), Communications/Intelligence(Com/Intel), Health Care(Health), Other Technical Specialists(OtTec), Support/Administration(Sup/Ad), Electrical/Mechanical Equipment Repairers(El/Mec), Craftsmen(Craft), Service and Supply Handlers(Ser/Sup), Non-Occupational(Non Occ).

b) Abbreviations for Separation Reasons are as follows: Pregnancy(Preg), Fraudulent Enlistment(FrdEn), Medical Disability(MedD), Behavior Disorder(BehD), Training Discharge(TrnD).

c) OTHER consists of the following separation reasons/categories: prior medical condition, weight, court conviction, homosexuality, minor infractions, and other reasons.

### **1. Infantry, Gun Crews, and Seamanship Specialists**

The infantry, gun crews, and seamanship specialists category includes many non-traditional occupations for women, due largely to the combat-related nature of

the positions. It has the second-highest female attrition rate, at 39.26 percent (see Table 7). This occupational category also has a relatively low representation of women, at 9.3 percent (Table 6). Table 10 reveals that women are more likely to leave the Navy as seamen due to pregnancy, or during training. It could also be seen that women are least likely to leave the Navy prematurely when working as installation security.

The data indicate that, setting pregnancy aside, the early separation of women in these occupations is driven largely by fraudulent enlistment and training discharge.

**Table 10. Infantry, Gun Crews, and Seamanship Specialists: Distribution of Attrition Rates of Female Navy Enlisted Personnel by Occupational Subcategory (OCC SUB) and Separation Reason/Category, Entry Cohorts 1986-1990**

OCC SUB <sup>a</sup>	Separation Reason <sup>b</sup> (Percent)						Total <sup>d</sup>
	Preg	FrdEn	MedD	BehD	TrnD	OTHER <sup>c</sup>	
Armor	3.3	0.8	0.6	0.4	0.3	0.8	6.1
Artill	1.9	0.9	1.0	0.9	0.4	1.0	6.1
Aircrew	2.5	0.8	0.5	0.9	0.1	0.7	5.6
Seaman	5.7	2.9	1.1	1.6	4.4	1.6	17.2
InSec	2.4	0.6	0.5	0.2	0.5	0.3	4.4
<b>Total<sup>d</sup></b>	<b>15.8</b>	<b>5.9</b>	<b>3.6</b>	<b>3.9</b>	<b>5.7</b>	<b>4.4</b>	<b>39.3</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

a) OCC SUB Abbreviations are as follows: Armor and Amphibious(Armor), Artillery/Gunnery(Artill), Air Crew(Aircrew), Seamanship(Seaman), Installation Security(InSec).

b) Abbreviations for Separation Reasons are as follows: Pregnancy(Preg), Fraudulent Enlistment(FrdEn), Medical Disability(MedD), Behavior Disorder(BehD), Training Discharge(TrnD).

c) OTHER consists of the following separation reasons/categories: alcohol or drugs, prior medical condition, weight, court conviction, homosexuality, minor infractions, and other reasons.

d) Percentages may not add up to totals due to rounding.

## 2. Electronic Equipment Repairers

The electronic equipment repairers category has the lowest percentage of women (6.1 percent from Table 6). As previously noted, this is a non-traditional occupation for women. The rate of female attrition in this category 30.93 percent, is one of the lowest rates across occupations (see Table 7).

As seen in Table 11, pregnancy again dominates as the most common reason for early separation.

**Table 11. Electronic Equipment Repairers: Distribution of Attrition Rates of Female Navy Enlisted Personnel by Occupational Subcategory (OCC SUB) and Separation Reason/Category, Entry Cohorts 1986-1990**

OCC SUB <sup>a</sup>	Separation Reason <sup>b</sup> (Percent)						
	Preg	FrdEn	MedD	BehD	TrnD	OTHER <sup>c</sup>	Total <sup>d</sup>
Ra/Radr	1.3	0.1	0.3	0.4	0.1	1.4	3.5
Fire	2.9	0.1	1.9	0.4	0.2	2.0	7.5
Sonar	1.6	0.2	1.4	0.2	0.1	1.8	5.4
ADP	5.8	0.1	0.7	0.4	0.2	2.5	9.6
Other El	1.5	0.1	0.9	0.8	0.1	1.6	4.9
<b>Total<sup>d</sup></b>	<b>13.1</b>	<b>0.6</b>	<b>5.1</b>	<b>2.1</b>	<b>0.7</b>	<b>9.3</b>	<b>30.9</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

a) OCC SUB Abbreviations are as follows: Radio/Radar(Ra/Radr), Fire Control Electronic Systems(Fire), Sonar Equipment(Sonar), ADP Computers (ADP), Other Electronic Equipment(Other El).

b) Abbreviations for Separation Reasons are as follows: Pregnancy(Preg), Fraudulent Enlistment(FrdEn), Medical Disability(MedD), Behavior Disorder(BehD), Training Discharge(TrnD).

c) OTHER consists of the following separation reasons/categories: alcohol or drugs, prior medical condition, weight, court conviction, homosexuality, minor infractions, and other reasons.

d) Percentages may not add up to totals due to rounding.

In addition, women in ADP computers repair are more likely to separate early than women in any other occupational category. The data suggest that women may be leaving Navy occupations that are more in demand in the civilian sector. Again,

the Inter-Service Code (ISC) provides the official justification for leaving, but the actual reason may differ.<sup>76</sup>

### 3. Communications and Intelligence Specialists

Women account for 12.9 percent of all enlisted personnel in the communications and intelligence specialists category (see Table 6). The female attrition rate (30.4 percent) is on the lower end across occupational categories (Table 7). Table 12 reveals that pregnancy is the most prevalent reason for early separation in this category. The data show that women in signal intelligence/ electronic warfare are more likely to leave early than women who are in intelligence. Women in intelligence also have the lowest attrition rate for pregnancy among those in the Communications and Intelligence field.

**Table 12. Communications and Intelligence Specialists: Distribution of Attrition Rates of Female Navy Enlisted Personnel by Occupational Subcategory (OCC SUB) and Separation Reason/Category, Entry Cohorts 1986-1990**

OCC SUB <sup>a</sup>	Separation Reason <sup>b</sup> (Percent)						
	Preg	FrdEn	MedD	BehD	TrnD	OTHER <sup>c</sup>	Total <sup>d</sup>
Radio	1.8	0.2	0.7	0.9	0.2	1.8	5.6
Radar	4.5	0.4	0.9	0.7	0.2	2.2	8.8
Signal	6.2	0.2	0.8	0.9	0.2	3.2	11.6
Intell	1.7	0.2	0.6	0.6	0.2	0.9	4.2
<b>Total<sup>d</sup></b>	<b>14.3</b>	<b>0.9</b>	<b>3.1</b>	<b>3.2</b>	<b>0.8</b>	<b>8.1</b>	<b>30.4</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

a) OCC SUB Abbreviations are as follows: Radio and Radio Code(Radio), Radar and Air Traffic Control(Radar), Signal Intelligence/Electronic Warfare(Signal), Intelligence(Intell).

b) Abbreviations for Separation Reasons are as follows: Pregnancy(Preg), Fraudulent Enlistment(FrdEn), Medical Disability(MedD), Behavior Disorder(BehD), Training Discharge(TrnD).

<sup>76</sup>Klein, Hawes-Dawson, and Martin, 7.

- c) OTHER consists of the following separation reasons/categories: alcohol or drugs, prior medical condition, weight, court conviction, homosexuality, minor infractions, and other reasons.
- d) Percentages may not add up to totals due to rounding.

#### 4. Health Care Specialists

This is a traditionally-female occupational category. It claims the highest representation of women, 22.3 percent, across occupations (Table 6). It also has a relatively high attrition rate (Table 7).

Table 13 indicates that women employed in medical care are most likely to separate early due to pregnancy. Women in medical support positions are least likely to separate early. This could be a function of employment opportunities in the private sector. It is interesting to note that medical disability is the second-most frequently used justification for separation in the health care occupation at about 4 percent overall.

**Table 13. Health Care Specialists: Distribution of Attrition Rates of Female Navy Enlisted Personnel by Occupational Subcategory (OCC SUB) and Separation Reason/Category, Entry Cohorts 1986-1990**

OCC SUB <sup>a</sup>	Separation Reason <sup>b</sup> (Percent)						Total <sup>d</sup>
	Preg	FrdEn	MedD	BehD	TrnD	OTHER <sup>c</sup>	
Care	6.8	0.2	1.5	0.8	0.2	2.8	12.3
Supp	2.3	0.3	0.8	0.8	0.1	1.6	5.9
Allied	3.9	0.2	0.9	0.6	0.2	2.3	8.1
Dental	2.4	0.2	0.8	0.9	0.3	2.3	6.9
<b>Total<sup>d</sup></b>	<b>15.4</b>	<b>0.9</b>	<b>4.0</b>	<b>3.2</b>	<b>0.7</b>	<b>9.0</b>	<b>33.2</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

a) OCC SUB Abbreviations are as follows: Medical Care(Care), Ancillary Medical Support(Supp), Biomedical Sciences and Allied Health(Allied), Dental Care(Dental).

b) Abbreviations for Separation Reasons are as follows: Pregnancy(Preg), Fraudulent Enlistment(FrdEn), Medical Disability(MedD), Behavior Disorder(BehD), Training Discharge(TrnD).

c) OTHER consists of the following separation reasons/categories: alcohol or drugs, prior medical condition, weight, court conviction, homosexuality, minor infractions, and other reasons.

d) Percentages may not add up to totals due to rounding.

## 5. Other Technical and Allied Specialists

The other technical and allied specialists category has a relatively high proportion of women (12.0 percent), but it also has the lowest number of women (441) across occupations (Table 6). The attrition rate for women here is one of the lowest across occupations at 27.5 percent (Table 7).

Table 14 reveals that the attrition rate in this category is almost evenly distributed among the primary occupations. The illustration occupation is the exception with the lowest percentage of female attrition (3.7 percent overall). The data indicate that discharge for pregnancy, behavior disorder, and medical disability are the most prevalent reasons for early separation.

**Table 14. Other Technical and Allied Specialists: Distribution of Attrition Rates of Female Navy Enlisted Personnel by Occupational Subcategory (OCC SUB) and Separation Reason/Category, Entry Cohorts 1986-1990**

OCC SUB <sup>a</sup>	Separation Reason <sup>b</sup> (Percent)						
	Preg	FrdEn	MedD	BehD	TrnD	OTHER <sup>c</sup>	Total <sup>d</sup>
Photo	3.5	0.1	0.4	1.3	0.1	1.8	7.1
Illust	1.5	0.1	0.9	1.1	0.2	1.5	5.1
Weather	3.2	0.1	0.9	0.9	0.1	2.0	7.0
Music	3.4	0.1	0.8	1.0	0.3	2.4	8.0
<b>Total<sup>d</sup></b>	<b>11.6</b>	<b>0.4</b>	<b>3.0</b>	<b>4.2</b>	<b>0.6</b>	<b>7.7</b>	<b>27.5</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

a) OCC SUB Abbreviations are as follows: Photography(Photo), Mapping, Surveying, Drafting, and Illustrating(Illust), Musicians (Music).

b) Abbreviations for Separation Reasons are as follows: Pregnancy(Preg), Fraudulent Enlistment(FrdEn), Medical Disability(MedD), Behavior Disorder(BehD), Training Discharge(TrnD).

c) OTHER consists of the following separation reasons/categories: alcohol or drugs, prior medical condition, weight, court conviction, homosexuality, minor infractions, and other reasons.

d) Percentages may not add up to totals due to rounding.

## 6. Functional Support and Administration

The functional support and administration category is a traditionally-female area with the second-highest representation of women across occupations (21.5 percent as seen in Table 6). This occupational category also has the lowest rate of female attrition at 27.1 percent (Table 7).

Table 15 reveals that women employed in the religious, morale and welfare occupations are the least likely to separate early, while women in personnel occupations are more likely to leave early. Again, setting pregnancy aside, medical disability and behavior disorders are apparently driving attrition rates up in this category.

**Table 15. Functional Support and Administration: Distribution of Attrition Rates of Female Navy Enlisted Personnel by Occupational Subcategory (OCC SUB) and Separation Reason/Category, Entry Cohorts 1986-1990**

OCC SUB <sup>a</sup>	Separation Reason <sup>b</sup> (Percent)						
	Preg	FrdEn	MedD	BehD	TrnD	OTHER <sup>c</sup>	Total <sup>d</sup>
Person	2.0	0.1	0.8	1.0	0.1	2.2	6.2
Admin	2.3	0.1	0.4	0.2	0.1	1.6	4.6
Data	1.9	0.2	0.5	0.2	0.1	1.1	3.9
Acct	1.7	0.2	0.2	0.5	0.1	1.0	3.6
Oth Sup	2.7	0.1	0.5	0.6	0.1	1.9	5.9
Rel	1.5	0.1	0.2	0.3	0.1	0.5	2.8
<b>Total<sup>d</sup></b>	<b>12.1</b>	<b>0.8</b>	<b>2.5</b>	<b>2.9</b>	<b>0.5</b>	<b>8.3</b>	<b>27.1</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

a) OCC SUB Abbreviations are as follows: Personnel(Person), Administration(Admin), Data Processing(Data), Accounting, Finance and Disbursing(Acct), Other Functional Support(Oth Sup), Religious, Morale and Welfare(Rel).

b) Abbreviations for Separation Reasons are as follows: Pregnancy(Preg), Fraudulent Enlistment(FrdEn), Medical Disability(MedD), Behavior Disorder(BehD), Training Discharge(TrnD).

c) OTHER consists of the following separation reasons/categories: alcohol or drugs, prior medical condition, weight, court conviction, homosexuality, minor infractions, and other reasons.

d) Percentages may not add up to totals due to rounding.

## 7. Electrical/Mechanical Equipment Repairers

Although a relatively large number of women (4,077) are employed in the electrical/mechanical equipment repairers category, this category has a relatively low representation of women at 8.3 percent (Table 6). This is a traditionally-male occupational category, and the attrition rate for women here is comparatively high at 38.08 percent (Table 7).

Table 16 indicates that the pregnancy discharge is extremely prevalent in this category, and the attrition rate is almost evenly distributed among the occupational subcategories. The pregnancy and medical disability discharge rates are the highest, with most of these separations coming out of the shipboard propulsion occupations. These data suggest that there may be some problems for women on Navy ships.

**Table 16. Electrical/Mechanical Equipment Repairers: Distribution of Attrition Rates of Female Navy Enlisted Personnel by Occupational Subcategory(OCC SUB) and Separation Reason/Category, Entry Cohorts 1986-1990**

OCC SUB <sup>a</sup>	Separation Reason <sup>b</sup> (Percent)						Total <sup>d</sup>
	Preg	FrdEn	MedD	BehD	TrnD	OTHER <sup>c</sup>	
Air	2.9	0.2	0.6	0.4	0.1	1.4	4.27
Auto	3.3	0.2	0.8	0.5	0.2	2.8	4.89
Wire	2.8	0.2	0.9	0.5	0.1	2.3	4.58
Ship	4.1	0.2	1.3	0.6	0.2	3.3	6.36
Power	3.3	0.1	1.0	0.6	0.2	2.9	5.23
<b>Total<sup>d</sup></b>	<b>16.4</b>	<b>1.0</b>	<b>4.5</b>	<b>2.7</b>	<b>0.8</b>	<b>12.7</b>	<b>38.1</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

a) OCC SUB Abbreviations are as follows: Aircraft and Aircraft Related(Air), Automotive(Auto), Wire Communications(Wire), Shipboard Propulsion(Ship), Power Generating Equipment(Power).

b) Abbreviations for Separation Reasons are as follows: Pregnancy(Preg), Fraudulent Enlistment(FrdEn), Medical Disability(MedD), Behavior Disorder(BehD), Training Discharge(TrnD).

c) OTHER consists of the following separation reasons/categories: alcohol or drugs, prior medical condition, weight, court conviction, homosexuality, minor infractions, and other reasons.

d) Percentages may not add up to totals due to rounding.

## 8. Craftsmen

The craftsmen category is a traditionally-male field with a relatively low proportion of women (8.2 percent); however, it also has a relatively low rate of female attrition (29.9 percent in Table 7).

Table 17 shows the distribution of the female attrition rate to be relatively even across occupational subcategories.

**Table 17. Craftsmen: Distribution of Attrition Rates of Female Navy Enlisted by Occupational Subcategory (OCC SUB) and Separation Reason/Category, Entry Cohorts 1986-1990**

OCC SUB <sup>a</sup>	Separation Reason <sup>b</sup> (Percent)						Total <sup>d</sup>
	Preg	FrdEn	MedD	BehD	TrnD	OTHER <sup>c</sup>	
Metal	2.0	0.1	0.9	0.6	0.1	1.0	4.6
Constrt	2.9	0.1	1.0	0.6	0.1	2.3	7.1
Utility	2.8	0.2	1.0	0.6	0.1	1.9	6.7
Litho	2.3	0.1	1.0	0.8	0.1	1.5	5.9
Other	2.6	0.2	0.6	1.00	0.1	1.3	5.5
<b>Total<sup>d</sup></b>	<b>12.6</b>	<b>0.7</b>	<b>4.5</b>	<b>3.6</b>	<b>0.6</b>	<b>8.0</b>	<b>30.0</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

a) OCC SUB Abbreviations are as follows: Metalworking(Metal), Construction(Constrt), Utilities(Utility), Lithography(Litho), Other Craftsmen(Other).

b) Abbreviations for Separation Reasons are as follows: Pregnancy(Preg), Fraudulent Enlistment(FrdEn), Medical Disability(MedD), Behavior Disorder(BehD), Training Discharge(TrnD).

c) OTHER consists of the following separation reasons/categories: alcohol or drugs, prior medical condition, weight, court conviction, homosexuality, minor infractions, and other reasons.

d) Percentages may not add up to totals due to rounding.

It stands to reason that the medical disability discharge might be high here due to the hazards and difficulty of the job. The data reveal that medical disability and behavior disorder discharges are relatively high in the construction and lithography occupations.

## 9. Service and Supply Handlers

The service and supply handlers category has a relatively high proportion of women, at 12.7 percent (Table 6), as well as a relatively high rate of female attrition, 34.8 percent (Table 7).

Table 18 indicates that women in food services are most likely to separate early due to pregnancy, medical disability, or behavior disorder.

**Table 18. Service and Supply Handlers: Distribution of Attrition Rates of Female Navy Enlisted by Occupational Subcategories (OCC SUB) and Separation Reason/Category, Entry Cohorts 1996-1990**

OCC SUB <sup>a</sup>	Separation Reason <sup>b</sup>						
	Preg	FrdEn	MedD	BehD	TrnD	OTHER <sup>c</sup>	Total <sup>d</sup>
FoodSer	6.0	0.4	1.9	1.6	0.3	3.5	13.6
PerSer	4.9	0.4	1.2	1.4	0.2	4.1	12.0
Mat Iss	4.5	0.1	0.9	1.1	0.2	2.3	8.9
<b>Total<sup>d</sup></b>	<b>15.3</b>	<b>0.9</b>	<b>4.0</b>	<b>4.1</b>	<b>0.6</b>	<b>9.9</b>	<b>34.8</b>

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

a) OCC SUB Abbreviations are as follows: Food Service(FoodSer), Personal Service(PerSer), Material Receipt, Storage and Issue(Mat Iss).

b) Abbreviations for Separation Reasons are as follows: Pregnancy(Preg), Fraudulent Enlistment(FrdEn), Medical Disability(MedD), Behavior Disorder(BehD), Training Discharge(TrnD).

c) OTHER consists of the following separation reasons/categories: alcohol or drugs, prior medical condition, weight, court conviction, homosexuality, minor infractions, and other reasons.

d) Percentages may not add up to totals due to rounding.

Women who are employed in materials handling are least likely to leave early; but, when they do leave, it is for the same reasons as women in food service.

## 10. Non-Occupational

The non-occupational category is not divided any further than “non-occupation” because the people in this category are considered unqualified for occupational assignment at the time of data entry.

Table 19 points out that, unlike the other categories, fraudulent enlistment and training discharge are the most common reasons for the early separation of women not occupationally qualified.

**Table 19. Non-Occupational: Distribution of Attrition Rates of Female Navy Enlisted by Occupational Subcategories (OCC SUB) and Separation Reason/Category, Entry Cohorts 1986-1990**

OCC SUB <sup>a</sup>	Separation Reason <sup>b</sup> (Percent)						Total <sup>d</sup>
	Preg	FrdEn	MedD	BehD	TrnD	OTHER <sup>c</sup>	
Non-Occ	12.5	26.8	2.2	5.9	21.8	12.8	82.2

Source: Derived from data provided by the Defense Manpower Data Center (DMDC).

a) OCC SUB Abbreviation is as follows: Not Occupationally Qualified(Non-Occ).

b) Abbreviations for Separation Reasons are as follows: Pregnancy(Preg), Fraudulent Enlistment(FrdEn), Medical Disability(MedD), Behavior Disorder(BehD), Training Discharge(TrnD).

c) OTHER consists of the following separation reasons/categories: alcohol or drugs, prior medical condition, weight, court conviction, homosexuality, minor infractions, and other reasons.

d) Percentages may not add up to total due to rounding.

## D. SUMMARY OF RESULTS

The data reveal that while men and women tend to experience generally similar rates of attrition relative to their gender, the attrition rates for women are higher than for their male counterparts across each occupational category. The data show that the primary difference between the attrition rates of women and men relates to pregnancy, and alcohol or drugs.

The data suggest that women are most likely to be discharged for pregnancy, fraudulent enlistment, medical disability, behavior disorder, and training failure. Men are most likely to be discharged due to alcohol or drugs, fraudulent enlistment,

medical disability, behavior disorder, and training failure. These reasons for the early discharge of women and men account for about 80 percent and 72 percent, respectively, of total attrition.

The data indicate that the major reasons for female attrition in occupations with relatively high attrition rates are the same as those in occupations with relatively low attrition rates. In addition, the most prevalent reasons for attrition in occupations with a high percentage of women are the same as those in occupations with a relatively low percentage of women.

2. The reasons for attrition in occupations with a high percentage of women are the same as those in occupations with a relatively low percentage of women.



## **V. CONCLUSIONS AND RECOMMENDATIONS**

### **A. CONCLUSIONS**

The results of this study support the findings of previous research on attrition by female enlisted personnel. Most previous studies have found that women generally leave the military at higher rates than men. Although the attrition rate tends to be higher for women, the higher rate is mainly due to pregnancy. As seen in studies by RAND and GAO, this thesis also found that the prevalence of particular reasons for early separation were usually unrelated to gender, or entry into a particular occupation. The study results indicate that, with the exception of pregnancy and alcohol/drugs, the reasons for early separation are similar, generally, for men and women across Navy occupations.

The high percentage of medical disability and behavior disorders across occupations suggests areas of concern for the Navy. Is there an area of concern, within occupations, that is causing physical and mental health problems for women? Is there a weakness in the Navy's screening process for recruits, in that recruits appear to be mentally and physically qualified, but are not? Is the separation process relatively easy when it comes to a medical disability or behavior discharge? In addition, the high rate of fraudulent enlistment and training discharge in the seamanship and non-occupational categories could suggest changes in the recruiting process or training for women.

### **B. RECOMMENDATIONS**

Historically, there is no question that women have made valuable contributions to the military's success. Most recently, as a result of women's participation in the Persian Gulf War, legislation opened up over 250,000 combat positions for women. As of June 1996, women were serving in 736 of the 999 Department of Defense

enlisted occupational specialties. This trend of increased utilization of women in the military is likely to continue.

The problem is that the attrition rate of enlisted women has consistently been higher than that of men. High attrition rates among women equate to higher costs in recruiting, training, and readiness at a time when cost reduction is paramount for the military. If the Navy intends to maintain strong military manpower capabilities during a period of declining budget, then the issue of female enlisted attrition must be handled more effectively.

Based on the findings of this study, two recommendations are provided as possible actions that can be taken by the Navy to assist in reducing female enlisted attrition:

1. Conduct separation surveys to increase the likelihood of determining the actual reasons for early separations across occupations.
2. Conduct more extensive studies of the reasons for the prevalence of pregnancy separations across occupations.

Due to the scope of this thesis, it was not possible to analyze the reasons for early separation beyond the official justification shown in the ISC, or Inter-Service Separation Code. As previously noted, the ISC essentially reflects only the official justification for an individual's separation from the military, or the most direct path to a timely discharge. It may not indicate the actual reason why the person was discharged early. This is a major limitation when researching the reasons for attrition. A separation survey could provide a better basis, and a database, for identifying the specific reasons that account for most attrition across occupations. The Navy could use this information to formulate recruiting, training, retention, separation, and other policies that could help reduce attrition rates across occupations. The feasibility of conducting a separation survey is an area for potential study.

Given the tremendous impact pregnancy has on attrition rates, addressing this issue should be a first step in the development of effective policies and programs to reduce female attrition. A subject for research involves the reasons for the prevalence of pregnancy separations. Are Commanding Officers somehow encouraging pregnancy attrition by making pregnancy the path of least resistance for women seeking to separate early? In addition, since the Navy's young population is a microcosm of society, the reasons for society's high rate of adolescent pregnancy should be examined. The Navy may be in a position to address the underlying reasons and ultimately reduce the relatively high number of pregnancy separations.

The United States Navy is charged with the enormous mission of helping to defend the nation. Yet, it is the sailors and officers, the Navy's most valuable human resources, who must carry out that mission. The attrition issue is a difficult one to resolve for any military organization, but the Navy continues to demonstrate a strong commitment to doing the best for its people, both male and female. This commitment should extend to reducing personnel attrition--a difficult task, assuredly, but one that will ultimately strengthen the Navy's human resources and the organization as a whole.



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